OCTOBER 28, 1950 PAGES 489 TO 496

THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2

Telegrams: LANCET, RAND, LONDON Telephone: TEMPLE BAR 7228 and 7229

No. XVIII OF VOL. II, 1950 LONDON, SATURDAY, OCTOBER 28, 1950 Pp. 8—Price 1s.
No. 6635 VOL. CCLIX Founded 1823 PUBLISHED WEEKLY Registered as a Newspaper Annual Subscription: £2 2s.

Sci 15

UNIVERSITY OF CONNECTICUT SERIAL RECORDS

NOV 10 1950

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Nutrition and Antibodies

IT now seems that the relation between nutrition and antibody production is less close than might be expected. True, GELL[1] found that well-nourished British soldiers had better antibody responses than half-starved German civilians; but he remarked that the differences were slight. BALCH[2] has now measured the diphtheria-antitoxin production of two groups of patients whose nutritional state differed widely.

One group comprised 25 severely ill patients, many with advanced malignant disease and most with low serum-protein levels, who had lost up to 40% of their normal body-weight. In other words they were comparable to emaciated victims of Belsen.

The other group contained 19 well-nourished subjects, of whom 5 were in good health, 6 had an inguinal hernia, and 8 had either cerebral vascular accidents or cardiovascular disease without cardiac failure. All had retained normal weight for at least six months, and their disability was not of a kind to influence their nutritional state.

BALCH chose diphtheria antitoxin as the test antibody because the antigen—diphtheria toxoid—can be had in highly purified form; because in immune persons the antitoxin response is high and relatively uniform and can be accurately estimated even in low concentration; and because, with purified toxoid, the antitoxin is the only antibody produced and its concentration in the serum is thus a measure of the patient's total capacity to produce circulating antibody. All patients of the two groups were first proved to be Schick-negative, and each then received intramuscularly 42 Lf (0·12 mg.) of toxoid. Thereafter blood-antitoxin levels were ascertained at three-day intervals for at least three weeks, and in some patients at longer intervals until death. A rise in circulating antitoxin was usually noted within four days of the toxoid injection, with a maximum response between the fourteenth and twenty-fourth day. As in all experiments of this kind, the amount of antibody produced varied greatly between one patient and another, but there was no indication that in the depleted group the response was smaller than in the well-nourished group; indeed, the trend was in the opposite direction. Antibody response did not seem to depend on age; on serum-protein, serum-albumin, or serum-globulin level; or, surprisingly, on antibody level before the test dose of antigen was given. A number of patients showing the poorest antibody response did not acquire infection, whereas others developed infections although their antibody production was normal.

BALCH concedes that his results do not show whether diets rich in protein may enhance antibody production. Such diets have been advocated by CANNON and his colleagues[3] for preventing infection after surgical operations on nutritionally depleted subjects. BALCH doubts, however, whether antibody production is of prime importance in postoperative infections. Wound sepsis, hypostatic pneumonia, peritonitis, and genito-urinary infections are more probably caused by interference with the circulation than by failure to produce antibodies. CANNON's conclusions are also open to question because in his investigations animals were mostly subjected to an extremely low protein intake—often 1–2% of the diet—and the consequences of such a régime may not indicate accurately what happens in the nutritionally depleted human. Furthermore, there is evidence that the relation of nutrition to antibody production may be more subtle than that suggested by CANNON, who holds that protein depletion means failure of antibody production and that this failure can be corrected by protein repletion. For example, STOERK et al.[4] showed that pyridoxine-deficient rats produced less antibody to sheep erythrocytes than rats given a complete diet (normal controls) or a diet reduced in quantity to equal that eaten by the pyridoxine-deficient animals (inanition controls). A similar finding has been reported by AXELROD et al.,[5] and by AGNEW and COOK[6] with sheep erythrocytes and typhoid H antigen. Like BALCH, STOERK et al. and AGNEW and COOK observed that the inanition controls tended to produce more antibody than the normal controls. Pyridoxine deficiency interferes with amino-acid metabolism and may thus hinder globulin synthesis; and STOERK et al. suggest that this may impair antibody production, perhaps directly and by causing lymphoid atrophy, which is a feature of pyridoxine deficiency; the importance of the lymphocyte in antibody production is now well established.[7] For the present, therefore, it would seem that reduction of the dietary protein is less likely to hinder antibody production than is interference with protein metabolism. We still know nothing about the optimum intake of protein for antibody production or about the effects of a rapid, compared with a slow, turnover of globulin. Meanwhile, we have to bear in mind that antibody production is not synonymous with resistance to all infections.

1. Gell, P. G. H. *Proc. R. Soc. Med.* 1948, **41**, 323.
2. Balch, H. H. *J. Immunol.* 1950, **64**, 397.
3. Cannon, P. R., Wissler, R. W., Woolridge, R. L., Benditt, E. P. *Ann. Surg.* 1944, **120**, 514. Cannon, P. R. *J. Amer. med. Ass.* 1945, **128**, 360.
4. Stoerk, H. C., Eisen, H. N., John, H. M. *J. exp. Med.* 1947, **85**, 365.
5. Axelrod, A. E., Carter, B. B., McCoy, R. H., Geisinger, R. *Proc. Soc. exp. Biol., N.Y.* 1947, **66**, 137.
6. Agnew, L. R. C., Cook, R. *Brit. J. Nutrit.* 1949, **2**, 321.
7. See McMaster, P. D., Hudack, S. S. *J. exp. Med.* 1935, **61**, 783. Ehrich, W. E., Harris, T. N. *Ibid*, 1942, **76**, 335. Oakley, C. L., Warrack, G. H., Batty, I. *J. Path. Bact.* 1949, **61**, 179.

Distinction Awards

NOT least important of the many ways in which the N.H.S. differs from the conventional State medical service is its method of paying the consultant. From the time of his appointment, after 14 years or more of medical training, his remuneration rises automatically to a maximum of £2750, which may be reached at the age of 40. Thenceforward any increase depends on his securing one of the three grades of distinction awards offered to a third of the whole body of consultants, chosen by a mainly professional committee. This committee reaches its decisions after considering recommendations from different groups of colleagues who know the candidate in different capacities; but it also takes account of the desirability of spreading the awards suitably among the specialties, and likewise (since one of the aims of the service is to improve consultant services at the periphery) among the geographical regions. Nobody would claim that this combination of cross-bearings and rationalisation will always work equitably; and experiment in the next few years may show that professional opinion, collated in this way, ignores real merit almost as often as the fee-paying public ignored it

in the past. But the awards are, after all, additional to a competence; and if, like marriage, they are something of a lottery, they should, also like marriage, tend on the whole to reward the worthy. If a financial incentive is still useful in medicine, they provide it within the service; they introduce an element of flexibility into a system that might otherwise be dismally rigid; and we know enough of those already made to say that some have gone to first-rate men whose modesty has forbidden expectations.

In the House of Lords last week Lord MORAN, as chairman of the Awards Committee, described how the awards are allocated, and pointed out that they are an integral part of the remuneration of consultants—not something that could be removed quite easily either as an economy or because of inconvenience caused, for example, to the universities. The N.H.S. in England, Lord MORAN said, has at present only 56% of the specialist establishment which the Ministry of Health thinks it will ultimately need. "Medicine, like other professions and other industries, must appeal competitively for the man of promise," and he felt sure that "if it were not for these awards we should not compete successfully." With few exceptions, in his opinion, consultants are in favour of the awards scheme and would be shocked if it were withdrawn: they signed their contracts on the understanding that after they reached the peak remuneration of £2750—perhaps at the age of 40—there would still be a chance of financial advancement; and deep discouragement and disquiet would be caused if the agreement were for any reason dishonoured before the scheme had even been tried.

> "If the financial circumstances of the country, as once before, meant that it was necessary to make a percentage reduction in the salaries of every profession, then medicine would gladly bear its share; but to take a fraction of a single profession and to confiscate a considerable proportion of their income is, I think, hardly in accordance with the elements of justice."

We share Lord MORAN's view. We think it right that exceptionally able consultants should be able to earn fairly large incomes, without looking for them in private practice. We recognise that there are cogent objections to the new arrangement, and that it would have been far simpler to pay consultants as though they were Civil Servants but we believe that an innovation of this potential value deserves full trial, and we should deplore any attempt to interfere with it soon after it has made its difficult start. With surtax at its present level, the experiment costs the nation little; and we retain our hope that in a few years, with such modifications as may be needed, the awards system will win general approval as a useful departure from precedent, applicable possibly in other branches of medicine and also in other professions.

Annotations

THE HARVEIAN ORATION

THE fresh light shed on Harvey's life and work by successive Harveian Orators inspires increasing admiration. It was only fitting that Sir Leonard Parsons, F.R.S., in his oration last week, should discuss the contribution made by Harvey and his contemporaries to pædiatrics, with particular reference to that comparatively little known work, *De Generatione*. This, as the orator observed, contains a wonderful description of the development of the human embryo from the eighth week of intra-uterine life onwards. It also suggests that rickets was so prevalent in England in the 17th century that children walked and talked much later than they do now—a hypothesis further supported in the writings of Shakespeare, who makes the Nurse exclaim with wonder of the three-year-old Juliet—

> "For then she could stand alone; nay, by the rood,
> She could have run and waddled all about;"

Harvey is believed to have influenced Glisson in his decision to take up medicine, and so he can be given some indirect credit for Glisson's work *De Rachitide*, which appeared in 1650. Another close friend, it is thought, was Sir Thomas Browne, whose writings touched on rickets but whose principal contribution to pædiatrics lay in the antenatal field; certain of his statements can almost be taken to anticipate the effects on the embryo of dietary deficiencies and infection in the mother. Finally, the orator turned to Sydenham and contrasted his restatement of the value of pure observation with Harvey's emphasis on experiment. It was Sydenham who first described rheumatic fever in detail—though without mentioning the state of the throat in this condition—and it was the combination of his and Harvey's methods which raised British medicine to its greatest heights.

CONFERENCE ON RADIATION HAZARDS

THE conference organised by the new Institute of Biology and the Atomic Scientists Association, with support from the British Association, at the Royal Institution on Oct. 20–21 opened with symposia on the biological effects of radiation and the protective measures used against any kind of harmful nuclear radiation. These prepared the way for the geneticists to discuss the hazards of radiation to the general population. Several speakers insisted that those who control the output and distribution of radioactive materials or other sources of dangerous radiation should be animated by a high sense of duty. In the geneticists' view, since experimental mutations caused by X rays are detrimental, if such mutations occurred in man and were maintained for many generations the prospects for the human race would be gloomy; some even said that man already has quite enough genes for natural selection to play on, and more would be an encumbrance or worse. The last symposium, on atomic energy and the future, somewhat lightened the gloom by emphasising that there is no proof that deleterious mutants are produced in man by radiation; so we can take heart provided we also take precautions. In the final session there were strong expressions of opinion on the still greater hazards facing the scientist in the cloud of secrecy which is spreading over his work and which threatens his heritage of integrity and his traditional desire to reveal the truth. The atomic scientists were reminded that evil may arise from their studies. Without them the atomic bomb would not exist; they have thus become a menace to civilisation and suspect by the great body of the public. The plea behind these remarks was for action at the highest level to put an end to the prostitution of science.

ALCOHOL AND THE MOTORIST

CONVICTIONS are not easily obtained under section 15 of the Road Traffic Act, 1930, which lays down penalties for "Driving, or attempting to drive, or being in charge of a motor car on a road or other public place, while under the influence of drink or drugs to such an extent as to be incapable of having proper control." The driver's capability of having proper control has usually to be judged from the opinion of police and medical witnesses, and in borderline cases their evidence is often conflicting because the police describe the accused's condition when he was arrested, whereas the doctor does not examine him until he is charged, which may be some time later. Dr. Gorsky[1] strongly disapproves of acrobatic tests for drunkenness, such as walking along a chalk-line or repeating difficult phrases, which confuse the nervous and are sometimes remarkably well done by the drunken. Alcohol affects a man's car-driving long before the stage of dysarthria and incoördination; the driver who faultlessly performs all the mechanical movements of driving may yet be dangerously defective in judgment, reaction-time, and consideration for others, on which avoidance of accidents largely depends.

The alcohol content of the blood and urine, or of the breath, which is now being studied in America,[2] will reveal how much alcohol the driver has consumed, though delayed absorption may lower the findings in habitual drinkers; but the intoxication produced varies widely in different people and circumstances. Nevertheless, in Sweden the blood-alcohol level is always estimated when motorists are charged with drunkenness or involved in an accident, and a fine follows automatically if the level is over 0·08%, while if it exceeds 0·15% the punishment is up to a year in gaol. In Denmark, too, even if the clinical examination is satisfactory, a blood-level of 0·1% will earn the motorist 14–40 days' imprisonment.

1. Gorsky, A. *Med.-leg. J.* 1950, **18**, 48.
2. Harger, R. N., Forney, R. B., Barnes, H. B. *J. Lab. clin. Med.* 1950, **36**, 306.

In New York, where the blood, urine, or breath is analysed for alcohol within two hours of the motorist's arrest, and no medical examination is made, a blood-level of 0·05% or less is prima-facie evidence that the accused was not intoxicated, but findings between 0·05 and 0·15% are not prima-facie evidence either way. There is no such definite rule in this country, though very low or very high blood-levels will usually be conclusive. Otherwise the doctor who examines an arrested motorist must build up his conclusions from a multitude of clinical findings. Only occasionally will the magistrate be convinced by such observations as that the accused could eat a fried egg next morning (see p. 494).[3]

The antihistamine drugs have complicated the picture. Some of them, though they do not cause intoxication by themselves, can intensify the action of alcohol, so that a quantity which normally has little effect will produce drunkenness. The taking of these drugs is sometimes offered as a defence, though it is just as illegal to drive a car when under the influence of a drug as when drunk.

The Abstaining Motorists' Association in Sweden[4] has an impressively growing membership, and the insurance companies now offer its members reduced rates, having found that even a glass of beer on an empty stomach makes the average driver more prone to accidents. Our roads would be safer if all motorists noted this fact.

"GIVE US THE TOOLS"

ON his installation last week as president of the Society of Medical Officers of Health, Dr. J. M. Gibson, of Huddersfield, said that the foundations of the public-health service have been undermined, and the society must indicate very clearly what tools and materials are wanted for its rebuilding. Unfortunately so much might be spent on the elaborate structure for treating disease that expenditure on prevention might be curtailed; specialisation had increased to the point of having "57 varieties" of consultant, but new houses were the primary need for health. The M.O.H. could not remain divorced from hospital work, and his voice should be heard on the regional board as well as on house committees and management committees. (The most essential qualification for a hospital superintendent, in Dr. Gibson's opinion, is a medical training; and sooner or later lay administration will have to be abandoned on grounds of both efficiency and economy.) The M.O.H. must have as much responsibility as possible in the running of isolation hospitals, retaining his clinical contact—preferably as medical superintendent. He ought to control the admission and discharge of patients from tuberculosis sanatoria, and bookings for admission to maternity homes should likewise be made through his department. He should coördinate the care of old people, and the children's officer should operate as one of his team. Dr. Gibson also felt that the supervision of milk at all stages of production and distribution should be restored to the M.O.H.; he wanted preventive medicine more closely linked with industrial medical services, and he urged that the supervision of children should be continued through adolescence, if not throughout adult life.

He added that, believing in the justice of their claims, members of the public-health service await with confidence the decision of the arbitration tribunal now considering the need for salaries sufficient to attract recruits to public health.

THE DANGEROUS PLACENTA

THE diagnosis and treatment of placenta praevia was the subject of a crowded and lively meeting at the Royal Society of Medicine on Oct. 20. Mr. John Stallworthy reported the results obtained by an Oxford team in which the radiologist, Dr. Frank Reid, played a prominent part; the main features of his technique were the use of an aluminium filter to reveal soft parts and the application of gravity in positioning the patients. It was not suggested that radiography should or could replace clinical methods, but in expert hands it was an invaluable aid to diagnosis. In cases where the presenting part failed to engage, placenta praevia could often be confirmed or excluded without vaginal examination, and in antepartum hæmorrhage X rays might demonstrate the site of the placenta and enable the patient to be discharged. If the presenting part could enter the brim and act as a haemostat, vaginal delivery was permissible; if not, caesarean section was indicated. In a series of 250 cases there had been 1 maternal death (nasopharyngeal carcinoma); the uncorrected foetal wastage had been 18%, and the incidence of caesarean section 40%.

Mr. C. H. G. Macafee thought radiography of limited value here; clinical methods, excluding vaginal examination, should suffice for diagnosis. Placenta praevia was most commonly posterior, but the importance of the forward displacement of the presenting part had been exaggerated. Placenta praevia had been demonstrated in 108 of 341 cases of antepartum hæmorrhage admitted to the Royal Maternity Hospital, Belfast, in the years 1944–48; 50 had been delivered vaginally after artificial rupture of the membranes, and 58 had undergone caesarean section. There had been 1 maternal death (incompatible blood-transfusion) and an uncorrected foetal wastage of 14%. Prof. F. J. Browne congratulated the opening speakers on the excellence of their results, which he attributed partly to chemotherapy, to the increasing use of blood-transfusion and caesarean section, and to the early transfer of cases by general practitioners.

Mr. McIntosh Marshall remarked that both the opening speakers had vindicated his persistent emphasis on the importance of physical signs. Placenta praevia could very often be diagnosed from the history and abdominal palpation. Other speakers dwelt on the supreme importance of conservative methods of treatment, and spoke with feeling of the uncontrollable hæmorrhage which might follow an injudicious vaginal examination. One and all agreed that radiography, however good, must not be allowed to displace clinical methods, and when Mr. Stallworthy rose to explain that he shared this opinion complete harmony descended on the meeting.

THE DENTAL NURSE IN NEW ZEALAND

THE school dental nurses who for nearly thirty years have relieved New Zealand dentists of the routine dental treatment of school-children have achieved a high standard of technical efficiency and meet a very real need. The British dental mission which visited New Zealand to study this system has submitted a report[1] which shows how wholeheartedly the scheme is supported by the dental profession, the education authorities, and the public. Dental nurses receive a two-year training with pay before going out to work in the standard-type clinics which have been erected in school playgrounds. Each nurse assumes responsibility for not more than 500 children between the ages of $2\frac{1}{2}$ and 16, her duties including the filling and extraction of deciduous and permanent teeth and instruction in oral hygiene. The enrolment of children below 7 years requires no more than the written consent of the parent, but after that age a child must first be made dentally fit by a private practitioner at the parent's expense, and the readmission of defaulters is subject to the same rigorous condition. The British mission makes no attempt to judge the suitability of the scheme for this country, but justly observes that, if it were introduced, some modifications might be necessary, and the fullest coöperation of the dental profession would be required.

THE INFECTIOUS TUBERCULOUS

THE fabric of our social services, for all the work that has gone into its weaving, is still marred by ragged gaps. For half a century or more we have known that tuberculosis is no less preventable than leprosy; yet it has still to be prevented. True, there is growing insistence on prompt and proper treatment of the disease; but this derives from knowledge of the beneficence of modern therapy rather than from any sturdy new determination to be done with the infection. The sources of food-poisoning we assiduously track down and remove: the sources of tuberculosis we commonly leave in the general community, because we have simply not decided that this shall not happen.

The London County Council has been trying for some time to arrange suitable accommodation for patients with open tuberculosis who are unlikely to benefit from sanatorium treatment and who have either an unsuitable home or no home at all; the common lodging-houses of London are known to harbour at least 160 such people. For over two years the responsibility for these people has been in doubt; but the Ministry of Health has now ruled that this rests, not with the regional hospital boards, but with local health authorities, and, according to a report by the council's health committee, the Minister "contemplates the provision of

3. *Daily Mirror*, Aug. 30, 1950, p. 4.
4. *Pedestrians' Association Quarterly News Letter*, October, 1950, p. 10.

1. New Zealand School Dental Nurses: Report of United Kingdom Dental Mission. H.M. Stationery Office. Pp. 43. 1s. 3d.

hostels and night sanatoria by local health authorities as an essential part of the future development of the tuberculosis services." At present, however, he cannot approve the council's scheme for building a night sanatorium and industrial workshops on the site of St. Peter's Hospital, Stepney[1]; and in the face of this refusal the committee, which cannot obtain vacant hospital accommodation, proposes to seek his approval for the first of a series of hostels which would be opened in adapted premises and financed by money voted for other purposes. There are two special reasons for such action as this. One is that some of the homeless tuberculous, though possibly trained in sanatorium precautions, may be less likely than most to observe the prescribed routine. The second is that many in this group will be unfit for full employment—they may in fact be homeless for this reason—and these can claim, in their own right, some thought from the community. If the rule of first things first is to prevail, the committee will find the modest support it seeks.

SEBUM AND KERATIN

STUDIES of the surface skin fat, or sebum, and of keratin are throwing new light on the ætiology and treatment of skin disorders. MacKenna and his colleagues[2] obtained sebum from the skin of normal men by immersing the forearm in acetone, which was subsequently removed by distillation. In the residue they found about 5% of squalene (an unsaturated hydrocarbon, $C_{30}H_{50}$) and significant amounts of vitamin E, but no significant amounts of any other fat-soluble vitamin, of β-carotene, or of ergosterol. They can find no decisive evidence that the squalene has any special metabolic rôle; but vitamin E, which is an anti-oxidant, may help to retard the oxidation of unoxidised fatty acids and related compounds in the sebum. Anti-oxidants may also be very important for keeping the skin flora within bounds; and the so-called seborrhœic disorders may prove to be due to qualitative abnormality of sebaceous secretion, or dyssebosis, rather than to excess secretion, or seborrhœa, which is observed chiefly in acne vulgaris.

Much uncertainty also exists regarding the chemical processes of keratin formation. Reducing agents, such as sulphur, have long been used for treating not only "seborrhœic dermatoses" but also conditions of faulty keratinisation: the use of pyrogallol in psoriasis is an example. Reduction is probably an essential feature of keratin formation. On the ground that sodium *p*-aminosalicylate inhibits the metabolism of the tubercle bacillus by increasing its oxygen demands, Thiers[3] has administered this substance in conditions associated with dyskeratosis, such as psoriasis, pityriasis rubra pilaris, and lupus erythematosus. Usually the erythematous element was unaffected; but the rate of pathological keratosis was apparently lowered. The favourable effect of sodium *p*-aminosalicylate seemed to be cancelled by ascorbic acid but enhanced by nicotinamide, when these were administered concurrently. To patients with lupus erythematosus Thiers gave 10 g. of sodium *p*-aminosalicylate by mouth and 0·5 g. of nicotinamide intravenously each day. In two cases, one of which was of thirty years' duration, both the erythema and the desquamation disappeared completely; and in a third these signs decreased. Thiers admits that the number of cases is small; but the idea behind the method may stimulate further studies of the biochemistry of the skin and its products.

PREPARING FOR GENERAL PRACTICE

THREE deans of American medical schools who visited this country early in the year were struck by the unpopularity of general practice as a career. In their report,[4] they make the following pertinent comment: "Undoubtedly one development in British medical education which causes great concern has been exaggerated by the National Health Service Act. That is that almost all students and recently graduated physicians want to become specialists. Even before the Act the lot of the general practitioner in Britain was not too happy, and today it is demoralizing. We do not refer to overwork but rather to the fact that he seems destined to a routine life which does not offer the necessary facilities to practice good medicine and which fails utterly to offer the professional incentives which lead to continued growth of the physician .... If we really believe that the general practitioner is the 'backbone of medicine,' then let us prepare him for the most difficult task in medicine. After our experience in England, we are confident that this is the most important job facing the medical schools of the United States during the next decade."

There are signs that the Americans are already studying the problem in their own country and taking steps to deal with it. Last year American students in 31 "classes" were asked about their plans.[5] Of those questioned, 47·3% declared their intention of entering general practice, 31·1% wanted to specialise, and the remainder retained an open mind. The proportion wanting to specialise was higher among the senior than among the junior students; but the over-all proportion of would-be general practitioners was 14% higher than it had been three years before. This rather unexpected trend is associated with a growing recognition of the need to prepare students for general practice. Last year 42 of 79 American medical schools had courses designed to interest their students in this field of medicine, and had arranged to attach their students for varying periods to local practitioners; 15 teaching hospitals had established internships specifically designed for prospective G.P.s, and 12 were creating registrarships for the same purpose.

THE Wellcome Foundation have given the Royal Society of Medicine £80,000 to establish within the society a medical research library to be known as the Wellcome library.

Parliament

Medical Man-power

OPENING the debate in the House of Lords on St. Luke's Day, Lord HADEN-GUEST said that though he urged the greater integration of the National Health Service, the medical services of the Armed Forces, and the Colonial Medical Service, he did not think that these services should be fused into one, for their traditions and functions were separate. But under present world conditions we must provide good medical services not only for the population of these islands and the Colonies but also for the Army, Navy, and Air Force. The N.H.S. had about 19,000 general practitioners, about 5500 consultants, and about 3500 senior hospital medical officers and senior registrars—a total of 28,000. The Armed Forces had about 2500 and the Colonial Medical Service about 1900. To secure an inflow of doctors into the Colonial Medical Service the Medical Priority Committee (of which Lord Haden-Guest is chairman) had recommended that doctors who accepted Colonial Office posts in such places as Hong-Kong and West Africa should be regarded as discharging their liability to military service.

In this country the Services could to some extent make up their deficit by employing civilian doctors. But this system had its drawbacks. The civilian doctor received higher rates of pay than the other officers in his unit, perhaps even higher than the director of medical services of his Army formation. As a result no young man would apply for a short-service commission when he could go out, qualify as a specialist, and come back at a higher rate of pay. The usual objections made to Service life, besides unfavourable pay, were that it cut a man off from his profession, limited his medical experience, and took him abroad. Then when he was between 50 and 60 it left him stranded with a smallish pension and nowhere to go. Much the same objections applied to the Colonial Medical Service. The remedy, Lord Haden-Guest declared, was to put the other Services on equality with the N.H.S. He believed that

> "Every doctor unless he deliberately opts out, should from the time of his qualification and registration be put on an equal footing with every other doctor, and should be eligible for the same pension and other rights on the terms and conditions which are applicable to the National Health Service."

He also suggested that a formal link should be created by the Ministry of Health between representatives of the medical branches of the Services in each command and the N.H.S. and university representatives in the area. If all were put on an equal footing the prospect of two years' service with the Forces, or six years in the Colonies, would change from a duty to be performed to an opportunity to be accepted.

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1. See *Lancet*, July 8, 1950, p. 62
2. MacKenna, R. M. B., Wheatley, V. R., Wormall, A. *J. invest. Derm.* 1950, **15**, 33.
3. Thiers, H. *J. Méd. Lyon*, 1950, **31**, 699.
4. Diehl, H. S., Chandler, L. R., Dorst, S. E. *J. Amer. med. Ass.* 1950, **143**, 1492.
5. Anderson, D. G., Tipner, A. *Ibid*, **144**, 109.

THE SUPPLY OF SPECIALISTS

From the opening speech Lord MORAN got the impression that what was wrong was that there were not enough doctors to go round. Speaking of the supply of specialists, of which he had expert knowledge as chairman of the Awards Committee, he said that shortage was certainly the fundamental factor. The Colonial Medical Service needed 1500 specialists and was about 200 short. The R.A.M.C. needed 455 and it had only 197—a further 157 known as graded specialists were really of junior registrar status. To second to the R.A.M.C. specialists from the N.H.S. was no good if there was a shortage in the N.H.S. The Ministry of Health aimed at ultimately having 7000 whole-time specialists in the N.H.S. But in England and Wales there were only 5200 part-time specialists; and, if part-time was estimated at three-quarters time, this meant that only 56% of the Ministry's target were available. He believed that the fundamental task was to see that there were enough specialists for every service. Men would not undertake an intensive course of training spread over 14 years unless they were offered adequate material rewards. At present this was being done by the novel method of distinction awards, and Lord Moran did not believe that any Government would scrap this system without giving it a trial. One of the purposes of the N.H.S. was to upgrade backward hospitals, and this could only be done by some decentralisation of specialists. The distinction awards would help to make this possible by making men a little independent of private practice.

NEEDS AND REMEDIES

Lord BOYD-ORR supported integration of all medical services as an important and essential part of our preparations for defence. The new biological weapons, as well as atomic bombs, would not discriminate between civilians and soldiers. Lord AMULREE was anxious that we should spread the high standard of British medicine among people in the Colonies by exchange visits of doctors. He also wanted to see many more patients brought from the Colonies to Great Britain for specialised and difficult forms of treatment.

Lord WEBB-JOHNSON reminded the Lords that he had raised the need for improved pay and conditions of service in the Forces nearly two years ago. After describing the disappointing answers he had received at intervals since, he reaffirmed his belief that there was no basis for integration until the rates of pay were settled. He believed that secondment not only from the N.H.S. to the Forces and the Colonial Medical Service but in both directions would be of great value. Within the last few weeks the Colonial Office had arranged for superannuation rights to be carried on if a doctor entered the Colonial Medical Service. It should be possible for a doctor within twelve months of leaving the N.H.S. to be seconded from the N.H.S. to one of the other Services and in due course to return to his N.H.S. appointment.

The Marquess of SALISBURY said, that as chairman of a war-time committee of Ministers set up to allocate the supply of doctors between the Armed Services and the civilian population he had formed the opinion that there should be some permanent scheme to operate in peace as well as in war to ensure, without violent fluctuations, a fair flow of doctors where they are most needed.

GOVERNMENT REPLY

Lord SHEPHERD, replying for the Government, admitted that the Forces were short of 400 specialists and 100 general-duty doctors. In the Colonial Service the shortage was 200—or 10%. These figures were serious, but he thought they need not cause undue alarm provided the Government of the day and the medical profession were anxious about the situation. With better organisation and better conditions, he was sure, we could change the deficit, not into a surplus, but into a sufficiency. Was the deficit due to bad conditions in the Services or to shortage of doctors outside? In 1930, Lord Shepherd said, the number of registered doctors was 54,537, of whom 9000 lived abroad; in 1940 the figures were 62,847 and 11,000; this year 77,730 and 12,000. But though there was an increase in the number of doctors, was there really an increase upon which we could depend for feeding the Forces? We must remember that many women were now doctors and half of them did not practise. Again only the younger members of the profession were likely to be attracted into the Services. The older ones were already settled and unlikely to leave their families and practices save in an emergency. The large N.H.S. demands had also reduced the number of doctors available for the Services. These figures, he suggested, showed that we must not think how to transfer men and women from outside into the Forces or into the Colonial Empire but how to recruit more doctors.

According to an inquiry being made, at the request of the Minister of Health, there seemed to be a preponderance of students who wanted to be trained as specialists and not as general practitioners. This suggested that the encouragement offered to students to prefer specialist work was sufficient. Indeed the Minister of Health wished to use his influence and that of the hospital and university authorities to persuade some of these would-be specialists to reconsider their position and to take early service in the Army as general medical men. The Government had also arranged that men might transfer from the N.H.S. into the other services at home or abroad without losing their pension rights or seniority status. Hospital authorities had lately been asked to encourage some members of their medical staffs to obtain experience in the Colonies or the Forces by a temporary transfer.

An interdepartmental committee, consisting of representatives of the Ministry of Defence and the Ministry of Health, was considering the coördination of the medical services with the Forces and the Health Services. The Government were also considering the future of the Medical Priority Committee, the Central Medical War Committee, and the Committee of Reference. At any rate the integration of the Services had the blessing of the Government.

Turning to the question of payment, he said that it was now realised that after years of difficulty there must be a restrained movement both of wages and of salaries. The claim of the medical branches of the Services could be made not merely on grounds of the increased cost of living, but because it was right that men in the Forces should not be worse off than medical men in civil life or than men employed on general military occupations in the Forces. The Government were conscious that promises had been made before on this point. Though he could not yet make an announcement, he understood that the Ministries concerned had pressed this point upon the Treasury, and he was informed that "the hope is not too large to entertain that this will be the last time that your Lordships are bothered about this particular claim." The circumstances were urgent, and he was sure it would be in the interest of the country that this thorny problem should be settled satisfactorily once and for all.

In England Now

AT school in the physics laboratory we were encouraged to believe that heat, light, and sound are important. Those responsible for the new debating chamber of the Commons clearly share this view. In future our members of Parliament will legislate in a good light, with cool heads and warm feet. Breathing the correct amount of suitably warmed air, they will hear without effort the lightest word of the most distant back-bencher.

The main electric lighting of the new chamber is provided by 150 glass panels in the ceiling which can be brought up gradually from nothing to full strength as daylight fades. Two air-conditioning plants circulate warmed air at a temperature which will vary with the number of occupants. On a division, air is diverted from the chamber to reinforce the normal supply in the crowded lobbies. Beneath the green carpet, steel panel foot-warmers have been embedded flush in the floor to offer a gentle warmth to the members' feet. The temperature of the chamber will usually be kept at about 67°F., or, in summer, about 10°F. below outside temperature. These adjustments will be made by an engineer from a control room below the chamber. To help him in his task of intelligent anticipation, a 65 ft. periscope and a loud-speaker enable him to follow what is going on in the chamber.

Microphones hang at intervals from the galleries. One has even ventured on to the table before the Speaker. Small loud-speakers—unobtrusive grilles in the woodwork between every two seats—reinforce natural speech, but are set so low that they will not clash with natural speech, and those nearest to the microphone which is in use are automatically switched off. Members will sit on the traditional green leather benches, which are now cushioned with sponge rubber. The width of the seat and the slope of the back was settled after taking medical opinion.

Whatever the architects and the æsthetes may say about the tactful Gothic style of the new chamber, the members should certainly find it more comfortable than the old one.

* * *

It was tantalising of the Ministry to send me their fascinating *List of Proprietary Medicines Advertised Direct to the Public* only to tell me of therapeutic miracle-workers that my N.H.S. patients cannot enjoy. For this is a list in which Chaucer and Milton, Donne and Herrick, Bunyan and Swift, Keats and Gerard Manley Hopkins—to say nothing of James Joyce—might have collaborated. How Mr. Ivor Brown would enjoy its rich assonances, its apt alliterations, its artful neologisms. How its anonymous author, after despatching his appendiceal after-thoughts deleting 50 entries, must have thrilled at what remains. Even a compositor would wax lyrical over it.

Who would not babble of Bablets, and Blue Lion Fox Nuts (Shadforth's)—I like the bracketed Shadforth's; no ordinary undenominated blue lion fox nuts for *my* patient. Then there's Blinblow's Asthma Cure, the name a cure in itself. You can imagine the poor panting asthmatic at the chemist's counter, bubbling and blowing until—at last—he gets the whole name out in one triumphant gasp. Cured on the spot, I'll swear! De Witts Little Laxative Pills have a tactfully minimising sound; no need to be ashamed of asking the lady assistant for *little* ones. Grasshopper Ointment conjures up a vision of some serious soul rubbing it in while he studies the little grey books to rid himself of "the grasshopper mind." Nothing could be more Sunday-school-sounding than Infants' Friend, surely a tincture for the lambs of the flock; while for the hardened black sheep there are always Jordan's Gin Pills. There's Odds-On Liniment for horsy devil-may-care characters, and the hard-bitten worldling, disillusioned and taciturn, may find stern comfort in Shadforters or Songo. For Christopher Robin there's Teddylax, and for diehard imperialists Union Jack Paste—by Gad, Sir! White lions (not to be confused with Blue) bring up the rear of the Noah's Ark procession, and for a last beneficence there's Omega Oil.

The list will be a godsend in prescribing for my private patients.

* * *

A Scandinavian authority on Blood-alcohol tests for motorists has sent me an extract from the *Daily Mirror* of Aug. 30. "Enclosed," he says, "you will find the latest news about the investigation of intoxicated drivers in England, and I hope you will be pleased with the progress made." The extract is as follows:

THE FRIED EGG TEST GAVE HIM LICENCE BACK

A man accused of driving a car while under the influence of alcohol ate a fried egg at the police station in the morning after he was arrested, magistrates were told yesterday.

And that, said Mr. J. H. Glover, was proof his client was sober.

Doncaster magistrates restored the driving licence of the man who ate the egg—George Stevenson, 51, a Leeds traveller, who was convicted on February 14.

Mr. Glover said: "It is often the subject of a music-hall joke, but for anyone who can eat a fried egg on the morning after they have experienced a surfeit of alcohol, it is the acid test."

News

The report for 1949–50 by the management committee of the Executive Councils' Association for England includes figures for the rate of payment to general practitioners participating in the N.H.S. during the twelve months from April 1, 1949, to March 31, 1950. Payments totalled £37,999,462; and 1721 practitioners were receiving the fixed annual payment of £300. Among the 123 executive councils the capitation fee varied from 15*s.* 6*d.*–16*s* (2 councils) to 17*s.*–17*s.* 6*d.* (16 councils). On Jan. 1, 1950, a total of 16,598 principals and 947 assistants were in the service in England.

The University of Leeds has conferred the title of emeritus professor upon Dr. M. J. Stewart on his retirement from the chair of pathology. Dr. R. E. Coupland has been appointed lecturer in anatomy, Dr. G. Watkinson lecturer on medicine, and Dr. J. A. L. Vaughan-Jones part-time lecturer in public health.

On Oct. 18, the Bisset Hawkins medal of the Royal College of Physicians of London was presented to Sir Wilson Jameson for his services to public health.

On Thursday, Nov. 16, at 5 P.M., Dr. E. R. Cullinan will deliver the Bradshaw lecture at the college. He is to speak on the Clinical Interpretation of Jaundice.

On Tuesday, Oct. 31, at 8 P.M., at the Royal Anthropological Institute, 21, Bedford Square, London, W.C.1., Prof. W. E. Le Gros Clark, F.R.C.S., F.R.S., and Mr. L. S. B. Leakey, PH.D., will speak on the Miocene Apes of Kenya.

On Monday, Nov. 6, at 5 P.M., Prof. R. A. Peters, F.R.S., will deliver the Cameron lecture of the University of Edinburgh. He has chosen as his subject Applications of Chemical Defence Research in Medicine.

In England and Wales notifications of poliomyelitis during the week ended Oct. 14 were: paralytic 223 (241), non-paralytic 85 (112); total 308 (353). The figures for the previous week are in parentheses. Total uncorrected notifications for 1950 up to and including the week under review are 7012. The corresponding figures for 1947, 1948, and 1949 were 7454, 1825, and 4478.

Sir Harry Platt is to deliver the Bradshaw lecture to the Royal College of Surgeons of England on Thursday, Nov. 9, at 5 P.M. He has chosen as his subject Diagnosis and Prognosis in Sarcoma of Bone.

On Wednesday, Nov. 1, at 5 P.M., Dr. George Edwards will deliver the first Hewitt lecture to the Faculty of Anæsthetists of the Royal College of Surgeons. He is to speak on Frederick William Hewitt.

Prof. H. E. Frisbie (California) will deliver a lecture on the Histopathology of Enamel Caries, at Guy's Hospital Medical School, London, S.E.1., on Tuesday, Nov. 7, at 5.30 P.M.

Prof. R. J. Kellar will deliver a lecture at University College Hospital Medical School, London, W.C.1., on Friday, Nov. 3, at 5 P.M. He is to speak on the Circulation in Pregnancy.

Mr. Herbert Read, D.LITT., will deliver the Ernest Jones lecture to the British Psycho-analytical Society, at 1, Wimpole Street, London, W.1, on Wednesday, Nov. 15, at 8 P.M. He will speak on Psycho-analysis and the Problem of Æsthetic Values.

At a meeting of the Harveian Society to be held at 26, Portland Place, London, W.1., on Wednesday, Nov. 15, at 8.15 P.M., Lord Amulree will speak on Towards a Healthy Old Age.

The Medical Defence Union's fine new offices at Tavistock House South, Tavistock Square, London, W.C.1., were opened at a reception on Oct. 20, when Mr. Ivor Back, the president, and members of the council received the guests. The rooms, which include a council chamber with fine oak furniture, provide excellent accommodation for the M.D.U.s many and increasing activities.

In England and Wales the stillbirth and infant-mortality rates during the third quarter of this year were the lowest on record for any quarter. According to provisional figures, published by the Registrar-General in his weekly return for the week ended Oct. 14, the rates were: stillbirths 22·3 per 1000 total births, and infant mortality 24 per 1000 related live births.

At the London Hospital dinner on Oct. 19, Sir James Walton, presiding, said that when he was a student the case-mortality of acute appendicitis was over 90%. In his three months' clerking every student looked after one or two cases of typhoid; at times the hospital daily turned away 50 infants with summer diarrhœa; and a large proportion of operations were for excision of tuberculous joints or tuberculous glands of the neck. Today, as one who had spent most of his life in removing organs, he was most impressed by the progress of preventive medicine. Among the hospital staff the biggest change was the marvellous development of the team spirit, which was absent in his early days. He concluded with advice on the doctor's management of his years of retirement; and Sir Henry Tidy, proposing The Chairman, paid tribute to his undiminished zest for living.

A year ago Mr. Wilson Hey, the Manchester surgeon, was fined for contravening the Dangerous Drugs Acts by supplying morphine to trained mountain rescue parties, in accordance with the policy of the Mountain Rescue Committee (See *Lancet*, 1949, ii, 1228). Subsequently the Home Office authorised the issue of morphine by local practitioners to the supervisors of mountain first-aid posts. It seems that sometimes there has been difficulty in obtaining supplies in this way; and now the Home Office has agreed that Mr. Wilson Hey or his deputy may issue this drug. Thus the practice followed up to a year ago has been officially accepted.

The state of civilisation of a community can be deduced from the way it looks after its lame ducks—and ducklings—said Prof. Alan Moncrieff when he addressed the 62nd annual general meeting of the Invalid Children's Aid Association on Oct. 17. Judged by these standards, Great Britain emerged with credit, he continued, especially since the Education Act of 1944. However, many of the admirable facilities which might be provided for invalid children under existing legislation did not in fact materialise, and there was scope for coöperation between voluntary bodies and local authorities in filling the gaps. Dr. C. D. S. Agassiz, of Queen Mary's Hospital, Carshalton, observed that the problem of the invalid child presented three aspects—accommodation, education, and training for an occupation. He pointed out that these children could be helped to live remarkably normal lives, and told a story of a spastic child taking dictation from another who could not write. When they reached the words "sufferer from cerebral palsy" the child ejaculated "But I'm not suffering."

Dr. Peter Henderson, of the Ministry of Health, said that there were 8000 physically handicapped children among the total school population of 5 million. There were 74 special schools to cater for them, of which 55 were run by local education authorities. The eradication of rickets and osteomyelitis, and the fall in the incidence of bone and joint tuberculosis, had reduced the demand for special schools for the partially handicapped; there remained long waiting-lists for schools for severely handicapped children. Prof. W. S. Craig, of Liverpool, wound up the meeting with an appeal for £15,000 for the association's latest project—a holiday home for invalid children. It had previously been disclosed by the treasurer that the association has an overdraft of about £12,000 and the excess of expenditure over income last year was £3000.

CORRIGENDA: *Effects of Cortisone in the Rheumatic Diseases.*—In the first of the plans for administering 'Cortisone' or A.C.T.H. enumerated in our report last week (p. 483) of Dr. Hench's lecture, each course lasts for about *3–6* weeks. With administration of these substances the serum-protein and the hæmoglobin *tend to* become normal. The substances that have been investigated as possible alternatives to cortisone include *21-acetoxy*-pregnenolone, delta-5-pregnenolone, and desoxycorticosterone with or without ascorbic acid.

Anti-histamine Drugs and the Blood.—"Hydrochloride" in the eighth line of last week's annotation refers to tripelennamine hydrochloride.

ACADEMIC AND EDUCATIONAL

Institute of Orthopædics: Course in diagnostic and prognostic methods in orthopædics, Nov. 6–11. Fee 7 gns. Apply Dean, 234, Great Portland-street, W.1.

Society of Apothecaries of London: 10 Lectures on Modern Methods of Diagnosis and Treatment. 3.30 and 5 p.m. Dec. 4–8. Full details to be announced later. Registrar.

Chelsea School of Pharmacy, Chelsea Polytechnic, S.W.3: Lectures on Technical Aspects of the Blood Transfusion Service by A. Sterling, Ph.C. Mondays, 7.30 p.m., commencing Oct. 30. Fee, 4 lectures, 10/–. Apply to Head of School.

Empire Rheumatism Council: Postgraduate weekend course at Apothecaries' Hall, Nov. 17–19. Fee 2 gns., with application to Gen. Secretary, Tavistock House (N), Tavistock-square, W.C.1.

The Royal Society: Government Grant for Scientific Investigation. Third allotment 1950. Apply to Asst. Secretary (latest date Nov. 30).

Leeds University: Lecturer in Pædiatrics and Child Health (£1000–£100–£1500). Apply to Registrar (closing date Nov. 21).

Glasgow University: Lecturer in Psychological Medicine (maximum £1500). Apply to Secretary (closing date Nov. 15).

Glasgow University: Jr. Asst. Department of Midwifery. Apply to Secretary (closing date Nov. 11).

London Hospital Medical College: Hutchinson triennial prize; value £60. Subject: Factors Influencing Growth in Length of Bone. Particulars from Dean.

St. Mary's Hospital Medical School: Full-time Asst. Director, Pædiatric Unit (£1250–£1750). Apply to Secretary (closing date Nov. 18).

Hospital for Sick Children, W.C.1.: Research Fellowship for Pathologists to investigate Malignant Disease in Childhood. Tenable 1 year (£1000). Apply to Morbid Anatomist.

LIST OF HOSPITAL VACANCIES

(Further particulars of appointments available on request to Advertisement Manager)

Bethlem Royal & Maudsley, S.E.5.—Jr. Reg.; H.O. (2nd or 3rd post); Reg.; Sr. Reg.

Bearstead Mem., N.16.—Res. Obst. M.O. (H.O.); Res. Obst. M.O. (H.O.), Hampton Court. (3rd posts.)

Brompton, S.W.3.—3 H.P.s (non-res.).

Central Middlesex, N.W.10.—Res. Reg. Anæs.

Children's, S.E.26.—Res. M.O. (H.O.), 2nd or 3rd post.

Elizabeth Garrett Anderson, N.W.1.—1st H.P. (med. & pæd.), Female.

Hammersmith. Postgrad. Med. Sch. of London, W.12.—Reg. (orth.).

Hampstead Gen., N.W.3.—H.P.; H.S.; Cas. O.

Hosp. for Sick Child., W.C.1.—Orth. Reg. (part-time), O.P. Dept.

Hosp. for Sick Children, W.C.1.—2 H.P.s (Jr. Reg.s); H.S. (Jr. Reg.).

Hosp. for Women, W.1.—Res. Jr. Reg.

Hosp. of St. John & St. Eliz.—Surg. Reg. (Male).

London Jewish, E.1.—H.S. (H.O.).

London, E.1.—Sr. Reg. (obst. & gyn.).

London Chest, E.2.—Cons. Radiol. (Dept. of Radiol.).

London Chest, E.2.—Res. M.O. (Jr. Reg., Reg., or Sr. Reg.).

Marie Curie, N.W.3.—H.S. (Female).

Memorial, S.E.18.—H.P.; C.O. (2nd or 3rd post).

Middlesex Hosp., W.1.—Cons. Asst. Ophth. Surg.

Middlesex Hosp., W.1.—Sr. Surg. Reg.; Sr. Reg. (phys. med.).

Mile End, E.1.—H.P. (H.O.).

National Heart, W.1.—Res. M.O. (Jr. Reg. or Reg.), Male; H.P. (3rd post), Male, Maid's Moreton, Bucks.

National Temperance, N.W.1.—H.P. (gen.).

National, for Nervous Diseases, W.C.1.—Asst. Clin. Path. (Sr. Reg.).

National, for Nervous Diseases, W.C.1.—Asst. Reg. (O.P. Dept.), Sr. Reg.

N. Middlesex, N.18.—Jr. Reg. (anæs.).

N.E. Met. R.H.B.—Cons. P.-t. Pæd.

N.W. Met. R.H.B.—Reg. (T.B.), Chest Clinic.

N.W. Met. R.H.B.—P.-t. Ophth. Surg. (Royal Northern).

Paddington, W.9.—3 H.P.s (gen.); 2 H.S.s (gen.); H.S. (obst. & gyn.).

Prince of Wales Gen., N.15.—H.S. (orth., frac., & traum.) and Sr. Cas. O. (2nd or 3rd post); Gyn. H.S. (3rd post); Sr. H.S. (3rd post); Jr. Reg. (Res. Anæs.); Jr. Reg. (Res. Cas. O.); Jr. Reg. (Res. Sr. H.S.).

Royal Northern, N.7.—H.S. (2nd or 3rd post).

St. Alfege's, S.E.10.—H.P.

Royal Northern, N.7.—2 H.S.s & C.O.s (2nd or 3rd posts).

South London for Women & Children, S.W.4.—Res. M.O. (Jr. Reg.), Female.

St. Thomas's, S.E.1.—P.-t. Sr. Reg. (X-ray Diag. Dept.).

St. Peter's & St. Paul's, W.C.2.—P.-t. Cons. Rad.

St. Charles', W.10.—2 H.P.s (gen.); H.P. (T.B.); 2 H.S.s (gen.).

St. George in the East, E.1.—Jr. Reg. (C.O.).

St. Nicholas, S.E.18.—H.P.; H.S. (2nd or 3rd post).

Wanstead, E.11.—H.S.

Westminster. (All Saints Urol. Centre, S.E.11).—R.S.O. (Jr. Reg.), Male,

Provincial

Ashton, Hyde & Glossop H.M.C.—H.S. (orth.).

Aylesbury. Royal Bucks.—H.S. (E.N.T. & ophth.), 1st or 2nd post.

Aylesbury. Tindal Gen.—Res. Surg. O. (Jr. Reg.), Male.

Aylesbury. Royal Buckinghamshire & Aylesbury Isolation.—H.P. (pæd.), 2nd or 3rd post.

Barnsley. St. Helen.—Jr. H.M.O.

Barrow-in-Furness. N. Lonsdale.—Res. H.S.

Basingstoke. Rooksdown Hse. Plastic/Jaw Unit.—P.-t. Cons. Dental S.

Bishop's Stortford. Haymeads.—Jr. Reg. (surg.); H.O. (cas.).

Bebington, Wirral. Clatterbridge Gen.—H.S. (orth.).

Birmingham United. Queen Eliz.—Non-res. Med. Reg. (Reg. or Sr. Reg.).

Birmingham. Royal Orthopædic.—Res. H.O. (2nd or 3rd post); Locum Jr. H.M.O.

Birmingham. Sorrento & Lordswood Maty.—Obst. H.S. (2nd or 3rd post).

Birmingham. Canwell Hall Babies.—H.P. (2nd or 3rd post).

Birmingham Accid. & Rehab. Centre.—H.S.

Bradford Royal Infy.—Reg. (orth.).

Bradford Royal Infy.—H.S. (thor. surg.).

Brighton. Royal Alexandra for Sick Children.—H.P.

Braintree. Black Notley.—Med. Reg. (Pul. T.B. Unit).

Braintree. Black Notley.—Orth. H.O.

Bolton. Townleys.—Res. Jr. Med. Reg.; Res. H.P. (2nd or 3rd post), pæd.

Boston Gen.—Res. H.S.

Bromsgrove. Barnsley Hall.—Jr. Reg.

Bromley Group H.M.C.—Sr. Reg. (pæd.).

Bury Gen.—Cas. O.; H.S.

Bridgend. Morgannwg Mental.—Jr. H.M.O.

Bournemouth. Royal Victoria.—H.P.

Blackpool. Victoria.—H.S. (Surg. Unit).

Burnley. Victoria.—Jr. Orth. Reg.

Burton/Trent. Gen. Infy.—H.S.

Cambridge. Addenbrooke's.—Res. M.O. (Sr. Reg.).

Cambridge. Fulbourn (Mental).—Jr. H.M.O. (Tempy.).

Colchester. Essex County.—2 H.S.s.

Colchester. Myland.—Res. H.P.

Chichester. Royal W. Sussex.—H.S. (1st or 2nd post).

Chertsey. St. Peter's.—Res. H.S. for Gyn. & Special Depts.

Cardiff. Whitchurch.—H.P.s.

Carmarthen. West Wales Gen.—H.S.; R.S.O.

Chelmsford. St. John's.—Obst. H.S.

Chelmsford & Essex.—Sr. Reg. (radiodiag.).

Chelmsford & Essex & St. John's.—H.S. (Spec. Depts.).

Canterbury. Kent & Canterbury.—H.S. (E.N.T. & E.), 2nd or 3rd post.

Chester. Royal Infy.—Jr. Reg. (anæs.).

Chorley & Dist.—H.S.

Dewsbury Gen.—H.O. (derm.).

Davyhulme. Park.—H.O. (Regional Non-T.B. Thor. Surg. Centre).

Darlington Mem.—Res. Anæs. (Jr. Reg.); C.O. (H.O.).

Darlington Mem.—E.N.T. Reg.

Doncaster. Royal Infy.—Jr. Reg. (E.N.T.).

Dudley. Guest.—H.S.; C.O.; Res. Anæs.

E. Anglian R.H.B.—Reg. (path.), Ipswich Area.

Epsom. St. Ebba's.—Tempy. Sr. Reg. or Reg.

Eye, Suffolk. Hartismere.—Jr. H.M.O.

Farnham, Surrey.—Asst. Obst. O. (H.O.).

Glasgow. Shieldhall Fever.—Res. M.O. (H.O. or Jr. H.M.O.).

Glasgow. Western R.H.B.—Cons. E.N.T. Surg. (Falkirk, Stirling & Clackmannan); Cons. Psych. (Glasgow, & Killern); Phys. Supt. (Cons.), Belvidere I.D.; P.-t. Asst. Ophth. (Glasgow Eye Infy.), Sr. H.M.O.

Glasgow. Western R.H.B.—2 Sr. Reg.s (gen. surg.), Hairmyres & Stirling.; Sr. Reg. (E.N.T. surg.), Stobhill.

Great Yarmouth & Gorleston Gen.—H S.

Griffithstown, Mon. County.—Jr. H.M.O. (orth.).

Grimsby Gen.—Res. Anæs. (Jr. H.M.O.).

Guildford. Royal Surrey Cty.—H.S. (orth. & traum.).

Hillingdon, Middx.—Non-res. Reg. (cas.).

High Wycombe & Dist. War Mem.—Res. H.O. (surg.), 2nd post.

Huddersfield Royal Infy.—Rad. Reg.; E.N.T. Reg. (Jr. Reg.).

Hereford Gen.—H.S. (2nd post), cas., E.N.T., & frac.

Haverfordwest. Pembroke County War Mem.—R.S.O.; H.S.

Halifax Royal Infy.—Jr. Reg. (surg.).
Halifax Gen. Jr. Reg. (surg.).
Halifax Gen.—H.S.
Halifax Gen.—Jr. Obst. Reg.
Halifax Royal Infy.—Jr. Reg. (cas. & orth.)
Halifax. St. John's.—H.P.
Hertford County.—Jr. Reg. (surg.).
Hertford County.—H.P. (2nd or 3rd post), Male.
Hexham Gen.—2nd H.S. (gen. surg.).
Hull. De la Pole.—H.O. (2nd or 3rd post).
Hull. Royal Infy.—H.S.
Hull. Victoria for Sick Children.—H.P.
Isleworth. W. Middlesex.—H.O. (orth.).
Isleworth. W. Middlesex.—Reg. (med.).
Isleworth. W. Middlesex.—Sr. Reg. (anæs.).
Keighley & Dist. Victoria.—H.S.
Kettering Gen.—H.S. (traum. & orth.).
Leamington Spa. Warneford Gen.—R.H.S. (E.N.T. & ophth.), 2nd or 3rd post.
Leeds R.H.B.—Reg.s (chest diseases), Hull & Bradford; Sr. Reg. (psych.), Menston.
Leeds R.H.B.—6 Psych.s (Sr. H.M.O.s): Menston, Leeds; Bootham Park, York; Storthes Hall, Kirkburton; Stanley Royd Wakefield.
Leeds R.H.B.—Cons. Bact. (Hull Royal Infy.).
Leeds. United Hosp.s & University.—Sr. Reg. & Tutor (Dept. Med.).
Leeds. Gen. Infy.—H.O.s (ophth. & gyn.).
Leeds. Gen. Infy.—Reg. & Sr. Reg. (National Radioth. Centre).
Leicester. Markfield San. & Isolation.—Res. Reg.
Liverpool Royal Children's (City Branch).—Med. Reg. (Professorial Unit).
Liphook, Hants. King George's San. for Sailors.—H.O. (med.).
Lincoln. County.—H.O. (orth. & frac.).
Lowestoft & N. Suffolk.—H.S.
Malvern. St. Wulstan's.—Jr. H.M.O. (San. & Thor. Unit).
Macclesfield. West Park Branch.—Res. Obst. H.O.
Manchester. Crumpsall.—2 Jr. Regs. (med.); Res. Jr. Reg. (dental).
Manchester. Ancoats.—Jr. Reg. (med.).
Manchester R.H.B.—Cons. Path. (Ashton, Hyde, & Glossop).
Manchester Royal Eye.—H.S.
Manchester Royal Infy.—Jr. Res. Anæs. (H.O.), 2nd post.
Manchester. Royal Infy.—2 Jr. Surg. Reg.s.
Mansfield & Dist. Gen.—Sr. H.S. (acc. & orth.).
Mansfield. Harlow Wood Orth.—Jr. Reg.
Middlesbrough. Poole San.—Res. Jr. Reg.
Newcastle upon Tyne. Princess Mary Maty.—Obst. Jr. Reg.
N.E. Met. R.H.B.—Cons. P.-t. Pæd. (S.E. Essex Group); Cons. P.-t. Pæd. (Oldchurch).
Nelson. Reedyford Mem.—Res. Surg. Reg.
Norwich. Norfolk & Norwich.—H.S.; Sr. Cas. O. (Jr. Reg.).
Norwich United Hosp.s.—Obst. H.S. (West Norwich Hosp.).
Norwich. Jenny Lind Hosp. for Children.—H.S.
Nottingham Gen.—Aural H.S.; Jr. Aural Reg.
Nottingham Gen.—Sr. Res. C.O. (H.O.), 2nd or 3rd post.
Newport, Mon. Royal Gwent.—H.O. (orth.); H.O. (derm. & V.D.); H.O. (E.N.T. & ophth.).
Oxford. Warneford & Park.—Sr. Reg.
Oxford R.H.B.—Cons. Accid. & Orth. Surg., High Wycombe & Amersham.
Oxford R.H.B.—Cons. Phys. Med. (Swindon, Cirencester & Pewsey).
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Portsmouth. St. Mary's.—Cas. O. (Jr. Reg.); H.S.
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Plymouth. S. Devon & E. Cornwall.—H.S. (1st post), Greenbank; H.S. (2nd or 3rd post), Freedom Fields; H.S.s (Devonport); H.O. (anæs.), 2nd or 3rd post, Freedom Fields; H.S. (obst. & gyn.), 2nd or 3rd post; H.P. (1st post), Freedom Fields; H.S. (cas. & frac.), Greenbank, Jr. Surg. Reg.
Ramsgate Gen.—H.S. (1st post).
Redruth. Camborne, Redruth Miners' & Gen.—2nd H.S. (obst. & gyn.).
Romford. Oldchurch.—Jr. Reg. (path.).
Rochford Gen.—Res. M.O. (H.O.).
Salisbury Gen. Hosp.—Gyn. H.S.; H.P. (pæd.), Odstock.
Salisbury Gen. Infy.—H.S. (E.N.T.).
Salford. Hope.—H.O. (anæs.); H.O. (med.); H.O. (surg.).
St. Alban's City.—Res. H.P. (Med. Team), 2nd or 3rd post; Cas. O. (Male).
Southampton. Borough Gen.—Reg. (gyn. & obst.).
Southampton. Borough Gen.—H.S.
Stamford & Rutland.—Cas. O. & H.P.; H.O. (surg.).
Scarborough.—Jr. Reg. (surg.).
Scotland. Western R.H.B.—Sr. Reg.s (T.B., orths., radiodiag., radiothy., anæs., derm., E.N.T. surg., ophth., pæd., psych., path.).
Scotland. South-Eastern R.H.B.—P.-t. Cons. Asst. Phys. (Leith); P.-t. Cons. Asst. Phys. (Deaconess Hosp.).
Scotland. South-Eastern R.H.B.—T.B. Phys. (Sr. H.M.O.), E. Lothian, Berwick, Selkirk, & Roxburgh; Anæs. (Sr. H.M.O.), Edinburgh Royal Infy.
Scotland. South-Eastern R.H.B.—Reg.s: Obst. & Gyn. (West Fife); Radiotherapy, (Edinburgh Royal Infy.); T.B. (Edinburgh Royal Victoria); 2 Anæs. (Edinburgh Royal Infy.); Psych. (Fife Mental); Psych. (Dingleton Mental); Surg. (Bangour); Surg. O.P. Dept. (Edinburgh Royal Infy.).
Scotland. Northern R.H.B.—Rad. Reg. (Sr. Reg.); Reg. (anæs.).
Sheffield. Children's Hosp. Unit.—H.S.
Sheffield. Royal Infy. Unit.—Sr. Reg. (ophth.); Sr. Surg. Reg. or Reg.
Sheffield No. 1 H.M.C.—2 Jr. Reg.s (path).
Sheffield. City Gen.—H.S. (orth.); C.O.
Sheffield. City Gen.—Jr. Surg. Reg.
Sheffield. Royal Infy.—H.S. (orth.).
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Sherborne. Yeatman.—H.S. (Female).
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Southport. Gen. Infy.—Res. H.P.
Skipton Gen., Yorks.—H.S. (2nd or 3rd post).
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S.W. Met. R.H.B.—Jr. H.M.O. (Blood Trans. Service).
S. Western R.H.B.—Venerol. (Sr. H.M.O.), Bristol, N. Glos., Bath, & S. Som.
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S. Western R.H.B.—Dep. Med. Supt. (Sr. H.M.O.), Ham Green, Bristol.
S. Western R.H.B.—Cons. Rad. (W. Cornwall Clin. Area).
S. Western R.H.B.—Cons. Path. (W. Cornwall Clin. Area).
S. Western R.H.B.—Cons. Path. (S. Som. Clin. Area).
S. Western R.H.B.—Dep. Res. Phys. (Sr. H.M.O.), Winsley Chest Hosp.
Swindon Group.—Res. Cas. O. (H.O.); Res. H.S. (Gen. Surg. Unit), H.O.; Res. H.S. (gyn. & obst.).
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Shrewsbury. Royal Salop Infy.—H.P.
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Truro. Royal Cornwall Infy.—H.S.
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Wakefield. Clayton.—Locum Res. Surg. O.
Wakefield. Clayton.—Res. Orth. O. (Jr. Reg.).
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York. Maternity.—2 Res. Obst. H.S.s (2nd or 3rd post).
York. Military (Civilian Wing).—R.M.O. (2nd or 3rd post).
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New Zealand. Dunedin.—Med. Supt.
New Zealand. Auckland Hosp. Bd.—2 Radiols. (Jr. or Sr. Specialists).

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Derbyshire C.C.—Asst. Sch. & Asst. Maty. & C.W.M.O.
Essex C.C.—Asst. Cty. M.O.H. (South Essex Health Area).
Leeds City.—Asst. M.O. (maty. & c.w.).
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Ministry/Labour.—Factory Doctors: Easingwold, Dumbarton, Carnforth, Haddington.
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W. Sussex C.C. Littlehampton U.D.C., Worthing R.D.C.—Dist. M.O.H. & Asst. C.M.O. (Male).
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PUBLISHED by the PROPRIETORS, THE LANCET LIMITED, 7, Adam Street, Adelphi, in the County of London.
Printed by HAZELL, WATSON & VINEY, LTD., London and Aylesbury—Saturday, October 28, 1950.
PRINTED IN GREAT BRITAIN—Entered as Second Class at the New York, U.S.A., Office.